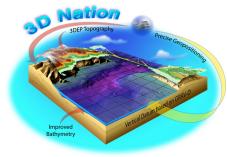
3D Nation Elevation Requirements and Benefits Study



3D Nation Goal:

Continually improve the national elevation mapping foundation by coordinating the topographic, coastal, and bathymetric mapping activities across the Federal Government.



What is 3D Nation?

3D Nation serves as a unifying structure for all national elevation efforts, and provides a consistent set of standards and objectives for an authoritative geospatial foundation to support na-

tional needs. The 3D Nation concept provides the basis for mapping our natural resources, transportation systems, businesses, public and private lands, and ecosystems in a changing world by uniting terrestrial and coastal/ocean mapping efforts from the highest mountains to the deepest oceans to ensure public access to an accurate national elevation dataset.

What is 3D Elevation Data?

3D elevation data refers to:

Topographic data - precise 3D measurements of the terrestrial terrain

Bathymetric data - 3D measurements of underwater depths and topography

Why do we need to understand stakeholders' needs for 3D elevation data?

Critical decisions are made across our Nation every day that depend on elevation data, ranging from immediate safety of life, property, and environment to long-term planning for infrastructure projects, and more. We use elevation data in agriculture to increase crop yields and reduce fertilizer runoff. We use it to manage catastrophes such as hurricanes and earthquakes, for storm surge warnings and flood events. We depend on it to manage our natural resources and plan ahead for sustainable use, protection, and enjoyment of our lands and seas. The 2012 National Enhanced Elevation Assessment (NEEA) was key to informing how the 3D Elevation Program (3DEP) could best respond to the rapidly growing need for high-quality elevation data to represent the land surface.

Today we have the same questions for elevation data in our inland rivers, oceans, coasts, and Great Lakes! What are the needs for, and value of, accurate three-dimensional topographic and bathymetric mapping data to the nation? How can Federal mapping agencies better design their programs to meet existing and future needs for both datasets? How do we become a true 3D Nation that is economically competitive and environmentally sustainable?

The Interagency Working Group on Ocean and Coastal Mapping (IWG-OCM) and the 3D Elevation Program (3DEP) are working together to answer these questions with a new requirements and benefits study. Learning more about the business uses and associated benefits to be realized from improved 3D elevation data will help us better direct federal mapping dollars to best meet many federal, state, and other national business needs.

What is the 3D Nation Elevation Requirements and Benefits Study?

Kicked off in late 2017, the 3D Nation Study will document and refine the requirements and benefits of the wide range of mission critical needs that depend on 3D elevation data to inform policy, regulation, scientific research, and management decisions. Such mission critical needs include flood risk management, infrastructure management, natural resources conservation, intermodal freight movement, safe maritime shipping and congestion avoidance, and updating nautical charts, among others.

The 3D Nation Study builds on the original NEEA to provide the ability to assess new acquisition technologies against user requirements and identify the tradeoffs between different approaches while simultaneously helping plan for the next round of 3DEP after nationwide coverage has been completed. Importantly the study adds our inland rivers, oceans, coasts, and Great Lakes to the equation.

How can my Agency be part of the 3D Nation Study?

Help us to understand how much our Nation benefits from topographic and bathymetric elevation data, and how to design the next phase of federal elevation mapping programs to help meet Federal agencies' needs.

Participate - Assign an Agency POC, take the questionnaire, encourage your stakeholders nationwide to participate and answer questions on use, valuation, and expanded need for elevation data.

Become a Funding Partner - A small amount of additional funding is needed to complete all the study components.

Funding Partner Benefits

- Help guide the study and get a first look at the results.
- Access to analytical tools to look at the benefits of potential projects and/or Business use combinations.
- Your agency's logo will be displayed on the website and in communications about the study and its results.

3D Nation Elevation Requirements and Benefits Study



Who is sponsoring the 3D Nation Elevation Requirements and Benefits Study?

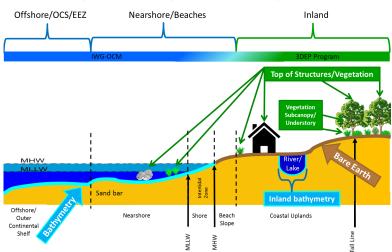
This study is sponsored by the National Oceanic and Atmospheric Administration (NOAA) Office of Coast Survey and the U.S. Geological Survey (USGS) National Geospatial Program as part of an effort to develop future program alternatives that would provide 3D elevation data to meet many federal, state, and other national business needs. The study will seek input from managers and data users from a variety of government entities as well as not-for-profit, academic, private, and commercial entities. The majority of this study has already been funded by NOAA and USGS. The remaining components that still need funding are detailed below.

The findings are expected to establish national business needs and benefits for 3D elevation data and associated technologies that will enhance the responsiveness of NOAA, USGS, and other Federal agency mapping programs to meet stakeholder needs. The findings will also inform the design of future programs that balance requirements, costs, and benefits of 3D elevation data at a national scale.



How is the 3D Nation Elevation Requirements and Benefits Study being conducted?

Information Gathering Phase: The first phase of the study that began in September 2017 is to comprehensively document and validate user requirements. Starting in the Winter of 2018, Federal agency Points of Contact (POCs) will be identified in approximately 50 Federal agencies to collect and summarize requirements and benefits information related to agency use of 3D elevation data. The POCs' role is to ensure that their agency's business needs for elevation data, as well as benefit information, are comprehensively represented and validated. A twostep process for each participating agency includes an online questionnaire followed by a workshop or multiple interviews. The questionnaire will be used to gather the initial information and agency workshops and interviews will be used to refine the collected information. Concurrently with the federal process, state, local, and tribal requirements for 3D elevation data will be gathered using the same questionnaire, interview/workshop and validation processes. The analysis will include information from not-for-profits and selected industries.



Topographic, coastal, & bathymetric 3D elevation data across a multitude of geographies.

Follow on Study Tasks (if fully funded):

- Analyze the collected business use and benefits information to develop proposed standardized national dataset options that meet a majority of the business uses and to determine the cost and value of each option. The cost estimates for national data sets will take into consideration areas where suitable data already exist to meet requirements.
- Evaluate and compare alternative program scenarios based on their expected ability to produce the standardized national dataset options in terms of costs, risks, operational efficiency and other feasibility issues, using the infrastructure alternative best suited to the scenario being evaluated.
- The study is targeted for completion in 2019. The final report will include an analysis of multiple program implementation scenarios.

Study Timeline Follow on Study Tasks The report will be available to Information Gathering Phase Aggregate/ **Initial Data** Analysis/ Study Data **Preparation** Collection Validation Report Development (3 months) (7 months) (6-9 months) (6 months) (6 months) dentify Fed POCs/ Develop Program Study Design ggregate Benefits by Business Use Conduct Analyze Benefit/Cost Questionnaire Open Validate Interview Final Report & Geodatabase Results (Reports & Geodatabase) Summary Reports for **Determine Program** OMB Approval 2017 2018 2019

Federal and State agencies and other interested stakeholders.

For more information:

Contact:

3DNationStudy@usgs.gov

Visit: https:// communities.geoplatform.gov/ ngda-elevation/3d-nation-study/